

1-4 (ninth-6) mm. long

Coreopsis Black Field Thes. Bot. Ser. xi. no. 6.

Field Mus. Bat. Ser. x i. no. 6.

Some details derived from the revision by Sheriff, Tullus, 1935, Ser. XI, no. 1.

a. Outer involucre much shorter than inner; style-tips truncate as obtusely
short-conical; achenes oblong \pm *haliophysis* () P. & S. ... b.

b. Petioles with smooth simple leaves; ligules ~~roseate~~ white
1-3 mm. long; inner

short-conical; achenes oblong,
b. Perennials with mostly simple leaves; ligules ~~rose~~ rosaceous, white
or yellow in achenes nearly straight, smooth, ^{about 3 mm. long, 1-3 mm. broad;}
Leaves mostly opposite, narrowly linear, ^{about 35 mm. long,} ligules rosaceous or white;
achenes wingless; rhizome creeping.
1. C. rosea

b. Annual with principal leaves opposite, the upper ones ~~commonly~~
divided into narrow segments; ligules yellow, often papillose-pustuled. 3. C. tinctoria.

c. Achenes roundish, incurved, open at apex; ligules mostly palmately lobed, ~~Lachna~~ (~~caud. cap...~~)
apex ^{of infloresc.} acute; this scarious, outspread, broad when well developed. L
the upper lanceolate to linear, wings

c. Achenes roundish, ~~min.~~
apex ^{of interface} acute; ligules mostly palmately lobed ~~when well developed~~
d. Wings of achene thin-scariosus, outspread, broad when well developed. 2
e. Lower leaves lanceolate to spatulate; ligules ^{the upper lanceolate to long,} wings
f. ^{1.3-3 cm. long.} ~~outspread, broad when mature.~~
g. 2. ^{lanceolate.}

Lower leaves lanceolate; laciniate lvs. mostly on lower half of stem, mostly entire, lanceolate; long; achenes 2.3-3 mm long. *G. C. lanceolata*

Leaves mostly long, narrow,
peduncles scape-like,
petals 4-6 mm. long.
Leaves extending well up the stem, the upper 3-5 parted;
petals becoming 6-7 mm. long; petals becoming 6-7 mm. long
achenes 2.5 mm. long; *S. grandiflora*.

e. Lower leaves ~~oblong~~^{oval} + ~~acute~~^{obtuse}, the upper oblong or
oblong-lanceolate; ligules 1-2.3 cm. long; achenes 2.8-3 mm. long
6. C. pubescens

d. Wings of achene narrow, callous-thickened, involute; lowest leaves
ovate or roundish *G. aviculata*

c. Achenes oblong, nearly straight, without cells, wingless or very
thin, a few at first or but slightly toothed, ~~*Baccharis*~~ *P. D. f.*

narrowly wedge-shaped; ligules entire or ^{but clefts sometimes opposite} ~~but clefts opposite~~ pointed.
Leaves sessile, palmately divided, ^{mostly} ~~mostly~~ but appearing whorled;
in a single round; ligules acute. Stems mostly

f. *Leaves sessile*
outer involucral
narrowly ~~simp.~~
mostly ^{but up to sometimes opposite state} ligules entire or ^{opposite pairs,}
palmately divided, stiff
bracts about asynally ⁱⁿ simp.; ligules acute; stems mostly
narrowly ^{but up to sometimes opposite state} but appearing whorled.
3 mm. broad..

outer involucral bracts absent or minute
less than 1 m. high ... ♀
♀ 3-leafed at divided base; achenes oblong, 1.8-2.3 mm. broad ... 8, 6, palmata

less than 1 m. high ... 7.
7. Leaves 3-cleft, not divided at base; achenes oblong,^{1.8}
or upper and lower part
divided to base; achenes obovate or elliptic.
achenes 2-4

g. Leaves 3-cleft, not divided base,
g. Leaves divided to base, ^{or upper and lower simple} achenes obovate or elliptic.
g. Leaves divided to base, ^{+ 2 linear} achenes 1-1.7 mm. broad.

g. Leaves divided into segments of leaves linear and flat to oval; achenes 1-1.7 mm.
Segments of leaves filiform as filiform-filiform; achenes 1-1.7 mm.

Segments of leaves filiform or very narrow; petioles long, slender, spreading; blades linear, flat to oval or rhombic; achenes 2-4 mm. broad.

bread. Segments of leaves linear and flat to oval or lanceolate to rhombic-
triangular, 0.5-2.5 cm. long, minutely soft-pubescent; segments of leaves ~~lanceolate~~
narrower, smaller yellowish green. 94. C. major.

Minutely salt-punctatum,
oval; disk ~~yellow~~ yellow.
at nodes; leaf-elements linear, 1-6 mm. broad;
10 + 3, *C. delphinifolia*.

Glabrous except at nodes; leaf-elements linear, 10 +
disk-corollas reddish-brown

f. Leaves petiolate, pinnately 3-5-divided; outer involucal bracts
with shorter ligules obtuse; stems 1-3 m. high. : 12, C. triplaris.